

Blue-green algae:

Information for cottagers and home owners.

What are blue-green algae?

Blue-green algae are primitive microscopic plants that live in fresh water. Their scientific name is **cyanobacteria** but they are more commonly known as pond scum. Normally blue-green algae are barely visible, but, during warm weather, populations can rapidly increase to form a large mass called a bloom. Blooms most commonly occur during the late summer and early fall.

What conditions favour algae growth?

Blue-green algae thrive in areas where the water is shallow, slow moving, and warm, but they may also be present below the surface in deeper, cooler water. One key factor affecting growth rates is the level of available nutrients such as phosphorus and nitrogen.

Where do these nutrients come from?

Runoff of household fertilizers, agricultural runoff, industrial effluent, effluent from waste management systems and faulty septic systems can elevate the levels of naturally occurring nutrients in water bodies.

Reducing or eliminating nutrient input from these additional sources is a proactive step in reducing the occurrence of algae blooms.

Is this a new problem?

Blue-green algae blooms are natural phenomena that occur in fresh water lakes, bays and inlets in countries around the world. The first report of harm to animals from blue-green algae came from South Australia in 1878.

Should I be concerned about blue-green algae?

Yes, you should be cautious, particularly during an algae bloom. Although many forms of blue-green algae are relatively harmless, some forms produce toxins which can be harmful to your health and the health of your animals. The most common toxins are called **microcystins**.

Symptoms of human health effects from contact with these toxins can include:

- itchy, irritated eyes and skin if you swim in contaminated water; and
- if the toxins are swallowed, symptoms such as headaches, fever, diarrhea, abdominal pain, nausea and vomiting. However, if swallowed in large quantities more serious health effects may occur.

How can I recognize a blue-green algae bloom?

Dense blue-green algae blooms may make the water look like bluish-green pea soup. When the bloom is very large, algae may form solid-looking clumps. Fresh blooms often smell like newly mown grass; older blooms smell like rotting garbage.

Can my drinking water be contaminated with toxins from blue-green algae?

If you obtain drinking water from a surface

water source during a blue-green algae bloom, then it is possible that the water may be contaminated with toxins. The microcystins are released into the water when the algae cell wall is broken either due to death and decay of the cell or by corrosive chemicals such as algaecides or chlorine.

Usually people won't drink water contaminated with blue-green algae blooms because of its unsightly pea soup appearance and foul smell. However, sometimes it is hard to tell if your drinking water has been contaminated without specialized tests for microcystin. Therefore, it is prudent to be cautious about using water taken directly from surface water bodies during suspected algae blooms.

How much microcystin is allowable in drinking water under the Ontario Drinking Water Quality Standards?

The current Ontario Drinking Water Quality Standard for microcystin-LR, is a concentration of 0.0015 mg/L (which is the same as 1.5 µg/L or 1.5 parts per billion).

If I see a bloom and suspect it's blue-green algae, what immediate actions should I take?

It is best to be cautious. If you suspect a blue-green algae bloom, assume toxins are present, avoid using the water and call the Ministry of the Environment Spills Action Centre at **1-800-268-6060**.

For more information on blue-green algae contact the Ministry of the Environment's Public Information Centre at: **1-800-565-4923** and see Health Canada's fact sheet at:

<http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/cyanobacter-eng.php>

Reducing the health risks is easy.

Follow the advice of the local Health Unit. Avoid activities that increase the chance of exposure to these algae toxins in the event of an algae bloom:

- **Do not drink, bathe or shower in untreated water. Do not allow children, pets and livestock to drink or swim in the water;**
- **Do not use herbicides, copper sulphate or other algaecides** that may break open algae cells and release toxins into the water;
- **Do not boil the water.** Boiling water may release more toxins into the water;
- **Do not cook with the water.** Your food may absorb toxins from the water;
- **Do not eat the liver, kidneys and other organs of fish caught in the waterbody.** Be cautious about eating fish caught in water where blue-green algae blooms occur;
- **Do not treat the water with a disinfectant like chlorine (bleach).** This may break open algae cells and release toxins into the water;
- **Do not rely on jug filtration systems** as they do not fully protect against toxin poisoning; and
- **Use alternative water sources** including bottled, carted or tanked water, or call a water treatment service provider for help. A detailed list of service providers is on the Ministry of the Environment's Website at:

www.ene.gov.on.ca/envision/gp/4222e_appendix.htm